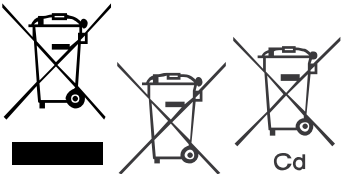
Information for Users on Collection and Disposal of Old Equipment and Used Batteries



These symbols on the products, packaging and/or accompanying documents mean that used electrical and electronic equipments and batteries should not be mixed with general household waste. Used electrical/electronic equipments and batteries must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of these products. Following the implementation by member states, private households within the EU states may return their used electrical/electronic equipments and batteries to designated collection facilities free of charge*.In some countries your local retailer may also take back your old product free of charge if you purchase a similar new one. *Please contact your local authority for further details. By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

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Preface

Congratulations on your purchase of this advanced camcorder. Ensure that you read this manual carefully and keep it in a safe place for future reference.

About this manual

Every effort has been made to ensure that the contents of this manual are correct and up to date. However, no guarantee is made regarding the accuracy of the contents. If the contents of this manual do not tally with the camera, please take the camera as a criterion, and our company reserves the right to change the contents or technical rules without notice in advance. Also, the manufacturer reserves the right to change the technical specification in advance without notice.

If the accessories do not tally with the actual package, please take the actual package as a criterion.

Copyright

© Copyright 2010.

All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, manual or otherwise, without the prior written permission of the manufacturer.

Precautions

General precautions

- Do not use or store the product in dusty, dirty, or sandy areas, as its components may be damaged.
- Do not store the product in a hot environment. High temperatures can shorten the life of electronic devices, damage batteries and warp or melt certain plastics.
- Do not store the product in cold areas. When the product warms up to its normal temperature, moisture can form inside, which may damage the electronic circuits.
- Do not attempt to open the casing or attempt your own repairs. High-voltage internal components create the risk of electric shock when exposed.
- Do not drop or knock the product. Rough handling may damage the internal components.
- Do not use harsh chemicals, cleaning solvents or strong detergents to clean the product. Wipe the product with a slightly damp soft cloth.
- Do not open battery cover while an image is being recorded. Doing so will not only make storage of the current image impossible, it can also corrupt other image data already stored in file.
- If the product or any of its accessories are not working properly, take them to your nearest qualified service center. The personnel there will assist you and if necessary, arrange for the product to be repaired.
- Test for proper operation before using the camera.

Notes on the LCD Screen

Be very careful to ensure the fluid contained in the LCD screen does not escape if the screen becomes cracked or damaged. If this occurs, follow these steps:

- If the fluids make contact with skin, wipe it with a clean cloth then rinse with a large amount of water.
- If the fluid makes contact with eyes, wash eyes with clean water for at least 15 minutes and go to the hospital as soon as possible.
- If the fluid is swallowed, first rinse mouth with water, then drink a large amount of water and induce vomiting. Go to the hospital as soon as possible.

Operation conditions

- This camera is designed for use in temperatures ranging from 0°C to 40°C (32°F to 104°F).
- Do not use or keep the camera in the following areas:
  - In areas subject to direct sunlight
  - In areas subject to high humidity or dust
  - Near air conditioners, heaters, or other areas subject to temperature extremes
  - Inside of a closed vehicle, especially one parked in the sun.
  - In areas subject to strong vibration

Power supply

- Use only the type of battery that came with your camera. Using any other type of battery may damage the equipment and invalidate the warranty.
- Ensure the battery is inserted correctly. Inserting the battery incorrectly can cause damage to the product and possibly start a fire.

- Remove the battery if the camera is not going to be used for a long time. If the battery is left unused for more than 3 months, you need to charge the battery before use.

Before You Start

Take some test shots before performing a formal recording.

Before taking pictures with this DV camera in any important occasion (such as a wedding ceremony or an overseas trip), do test the DV camera beforehand to ensure that it functions properly. Any additional loss caused by the malfunction of this product (such as costs of photography or any loss of benefit generated by the photography) is not the responsibility of the manufacturer and no compensation will be given for it.

Copyright information

Take care to observe "No Photography" notices in certain locations. In these cases, you cannot record any live performance, improvisation or exhibits, even for personal purposes. Any transfer of pictures or memory card data must be conducted under the constraints of copyright law.

1 Introducing the camcorder

Read this section to learn about the features and functions of the camcorder. This chapter also covers system requirements, package contents, and descriptions of the hardware components.

1.1 System requirements

The camcorder requires a PC with the following specifications:

- Windows® 7 / Vista / XP operating system
- Intel® / AMD Dual-Core CPU or higher
- At least 1 GB of RAM or higher
- At least DirectX 9 video card, DirectX 10 is recommended
- Standard USB 1.1 port or higher
- At least 2GB or greater available hard disk

1.2 Features

The camcorder offers a variety of features and functions including:

- Full HD 1080p (30fps.)
- Digital camera – (max. 16 Megapixels)
- 3" TFT LCD Touch Display (16:9)
- 4x digital zoom
- Li-ion Battery NP120

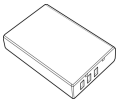
1.3 Unpacking the camcorder

The following items should be present in the package. If any item is missing or appears damaged, contact your dealer immediately.

Camcorder

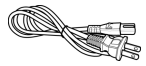
User's Manual

CD Rom

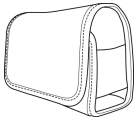


Li-ion Battery

Charger



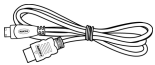
Power Cable



Pouch

USB AV Cable

DC-in Plug
(Optional)

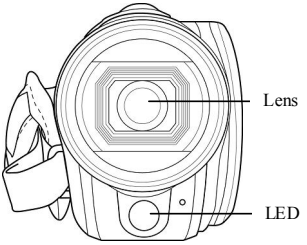


HDMI Cable
(Optional)

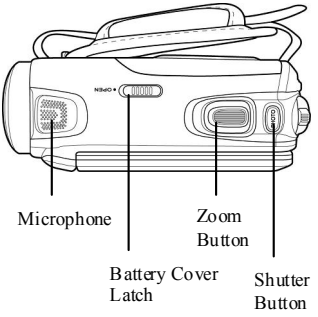
1.4 About the camcorder

Refer to the following illustrations to familiarize yourself with the buttons and controls of this camcorder.

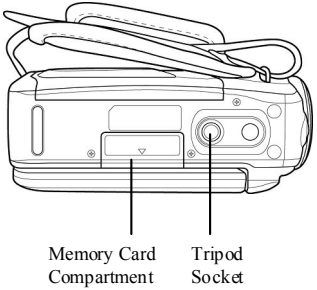
1.4.1 Front view



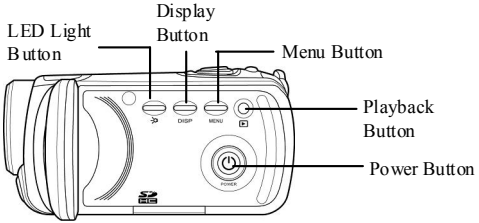
1.4.2 Top view



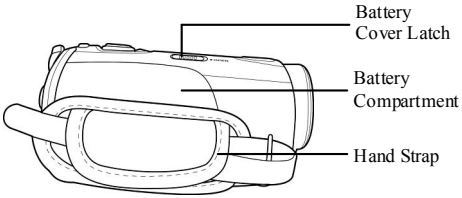
1.4.3 Bottom view



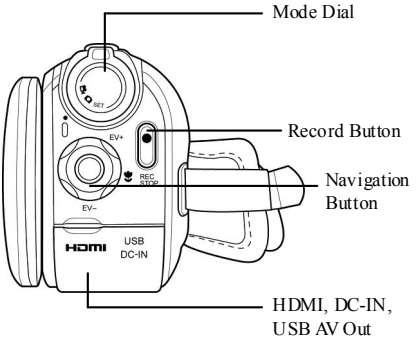
1.4.4 Right view



1.4.5 Left view

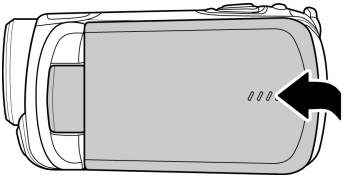


1.4.6 Back view

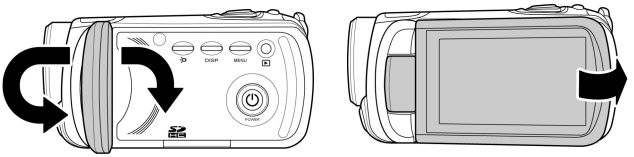


1.4.7 Operating the camcorder

To turn on the power, press the **Power** button for one second or open the LCD panel 90°.



Rotate the LCD panel can be rotated in both directions so you can view pictures and movies.



See the table below for a description of each button's function.

Name	Button	Function
Power Button		Press and hold to turn the camcorder on or off.
Shutter Button		Press to take a picture.
Zoom Button		Slide to the right/left to zoom in /zoom out when shooting videos or photos.
Navigation Button		● In **Video** and **Camera** mode: 1. Press up/ down to adjust the exposure settings. 2. Press the Navigation button to enable AF Lock. The AF Lock icon AF appears on the screen. 3. Press left to adjust the white balance settings. 4. Press right to enable the manual focus (MF) function. A MF icon appears on the LCD

		screen when enabled. Press right again to enable the macro function. A icon appears on the LCD screen when enabled. ● In **Camera Playback** mode: 1. Press right and left to view the stored images. 2. When the image is zoomed in, direction keys appear on the LCD screen. You may press the Navigation button to move the image. (up/down ↔ left/right). 3. Press the Navigation button up to enter the Thumbnail mode. 4. In the **Thumbnail** mode, press up, down, left, right to select the thumbnail images, and then press the middle Navigation button to view the image in full

		screen mode. ● In **Video Playback** mode: 1. Press right and left to view the stored video clips and press the middle Navigation button to play/ stop the video clips. 2. In **Playing** mode, press right to fast-forward a video clip and move left to rewind a video clip. 3. Press the Navigation button up to enter the Thumbnail mode. 4. In the **Thumbnail** mode, press up, down, left, right to select a desired video clip, and then press the middle Navigation button to show the video clip. ● In **SET** mode, press left and right to highlight menu items and press the middle Navigation button to confirm.

Record Button		● Press to start recording a video. ● Press it again to stop recording.
Mode Dial		Use to switch to **Video**, **Camera**, or **SET** mode.
Menu Button		Press to display the menu for the current mode.
Display Button		Press once to turn off all OSD icons and press again to display all OSD icons.
LED Light Button		In **Video** and **Camera** modes, press to turn on/off the LED light.
Playback Button		In **Video** and **Camera** modes, press to enter the playback mode.

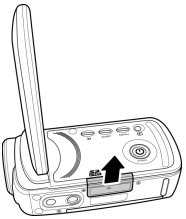
2 Getting started

Read this section to learn how to start using the camcorder. This section covers basic functions such as switching on, inserting the battery and memory cards, and configuring preliminary settings. See later chapters for advanced functions.

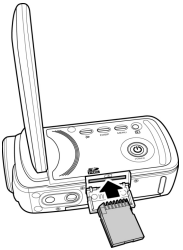
2.1 Inserting an SD card

An SD card can be installed in the camcorder to provide additional storage space for still images, video clips, or other files.

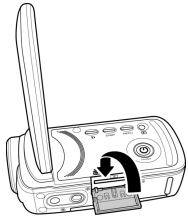
1. Open the LCD screen cover and open the memory card compartment cover.



2. Insert the memory card. We recommend using a memory card with a capacity of 1 GB or higher.



3. Close the SD card cover.



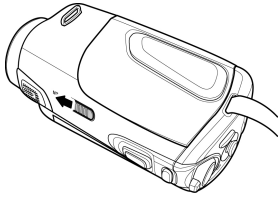
2.2 Inserting the battery

This camcorder is designed to use a rechargeable Li-ion battery. Only use the batteries supplied or similar batteries recommended by the manufacturer or your dealer.

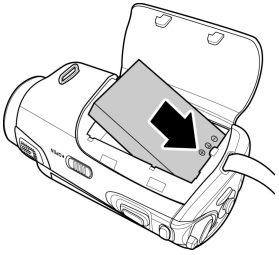
> **Note**:
> Install the battery exactly as described here. Installing the battery incorrectly could cause damage to the camcorder and possibly start a fire.

1. Push the battery cover latch to open the battery cover as shown in the illustration.

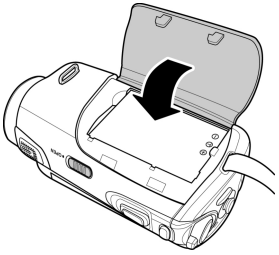
.



2. Insert the battery. Make sure that the + and – symbols on the battery line up with the + and – symbols on your camcorder.



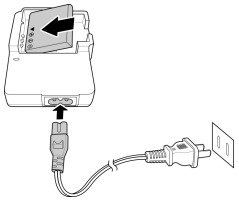
3. Close the battery cover.



2.3 Charging the battery

You can charge the battery with the charging unit provided. Follow the below steps to charge your battery.

1. Insert the Li-ion battery into the charging bay. Connect one end of the power cord to the charging unit and then plug the other end to the wall outlet as shown.
2. The orange LED will light up for proper charging.
3. After full charge, the LED turns to green.
4. Actual charging time depends on current battery capacity and charging conditions.



Approximate charging time is 180 minutes with a charger and 240 minutes with an USB connection.

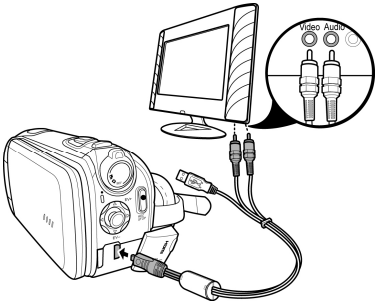
2.4 Turning on/ off the camcorder

Press and hold the power button to turn the camcorder on/off.

> **Note:**
> Closing and opening the LCD screen can power on/off the camera.

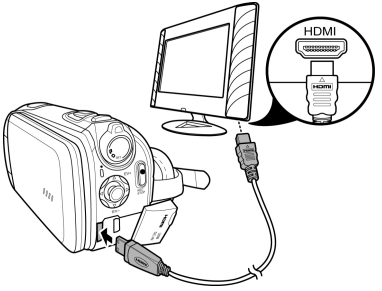
2.5 Connecting to TV (AV Cable)

To view pictures or videos on a TV, connect the camcorder to a TV using the supplied AV cable as shown.



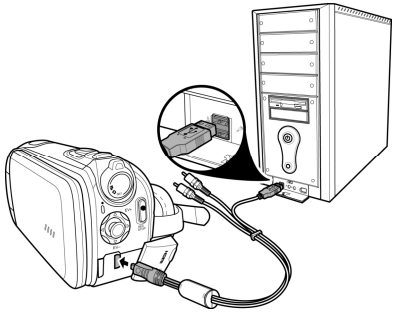
2.6 Connecting to TV (HDMI Cable)

You can also connect the camcorder to a TV using the HDMI cable (Optional).



2.7 Connecting to PC (USB Cable)

Connect the camcorder to a computer with the USB cable provided as shown.



2.8 Changing modes

The camcorder can operate in three modes: **Video**, **Camera**, and **SET**. Move the mode dial to toggle to different modes.

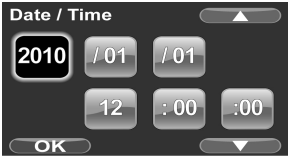
2.9 Before you start

Before you start using the camcorder, some basic settings such as date and time, languages and beep function need to be configured.

2.9.1 Setting the Date and Time

To adjust the Date / Time, please do the following:

1. Turn on the camcorder, and move the mode dial to **SET**.
2. Use the **left/right Navigation Button** to highlight **Date / Time** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
3. Use the **left/right Navigation Button** or tap the screen to select the field to be adjusted.



4. Use the **up/down Navigation Button** or tap / to adjust the value.
5. Press the **middle Navigation Button** or tap OK to confirm.

2.9.2 Setting the Language

To select the language, please do the following:

1. Turn on the camcorder, and move the mode dial to **SET**.
2. Use the **left/right Navigation Button** to highlight **Language** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
3. Use the **left/right Navigation Button** or tap the screen to select the desired language.

4. Press the **middle Navigation Button** or tap OK to confirm.

2.9.3 Setting the Beep

To adjust the Beep, please do the following:

1. Turn on the camcorder, and move the mode dial to **SET**.
2. Use the **left/right Navigation Button** to highlight **Beep** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
3. Use the **left/right Navigation Button** or tap the screen to select:
   - Off: Turn the operation sound off.
   - On: Turn the operation sound on.

4. Press the **middle Navigation Button** or tap OK to confirm.

3 Using the Camcorder

3.1 Recording Videos

To record a movie, do the following:

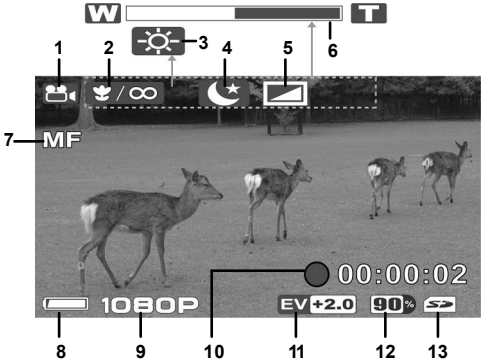
1. Flip open the LCD to turn on the camcorder and move the mode dial to **Video** mode.
2. Press the **Record Button** to start recording the video.

To adjust the video, you may:

- Use the **Zoom Button** to zoom in and out.
- Press the **LED Light Button** to activate or disable the LED light.
- Press the **left Navigation Button** to quickly change the White Balance.

3. To stop movie recording, press the **Record Button** again.

The Video Recording Screen



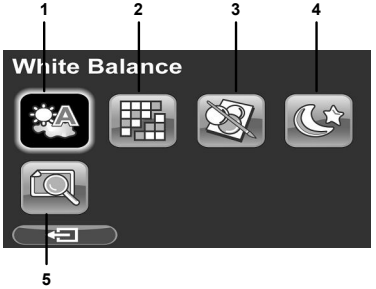
#	Icon	Description
1		Indicates that the camcorder is in Video mode.
2		Tap to zoom in or out the image (only available in MF mode).
3		Indicates the current White Balance mode.
4		Indicates that the Night mode is on.
5		Indicates the current Effect mode being used.
6		Indicates the amount of zoom being used.
7		Indicates that the Manual Focus (MF) is on. Indicates that the Macro is on. Indicates that the Auto Focus (AF) is on.
8		Indicates the amount of battery power left.
9		Indicates the current resolution.
10		Indicates the recording time.
11		Indicates the current exposure value.
12		Indicates the remaining space for your memory card/internal memory.
13		Indicates the memory card is inserted / no memory card inserted, files are stored in internal memory.

3.2 Video Menu

To select a menu in the **Video** mode, please do the following:

Make sure you are in the **Video** mode. Move the mode dial to switch to the **Video** mode if not.

1. Press the **Menu Button** to open the Video mode menu screen.
2. Use the **Navigation Button** to select the desired menu and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu. Please see below for the available options.
3. Press the **Menu Button** or tap to exit the menu.



The following options are available in the video mode menu:

1. White Balance
2. Resolution
3. Effect
4. Night Mode
5. Quality

> **Note**:
> The Quality menu is only appeared on the menu screen if you have inserted a memory card into the device.

Please read the following section to learn how to operate each menu.

3.2.1 White Balance

The White Balance menu allows you to set the white balance when capturing images under specific lighting conditions.

To set the White Balance, please do the following:

1. Use the **left/right Navigation Button** or tap the screen to select the desired option:
   - Auto: Select this option to let the camcorder set the white balance automatically.
   - Sunny: Select this option for daylight filming.
   - Cloudy: Select this option for filming in cloudy days.
   - Fluorescent: Select this option for fluorescent lighting.
   - Tungsten: Select this option for normal indoor lighting conditions.
2. Press the **middle Navigation Button** or tap OK to confirm.

3.2.2 Resolution

The Resolution menu allows you to set the resolution before you capture an image or a video. The higher the resolution, the more memory space is required.

To select the resolution, please do the following:

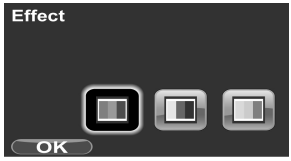
1. Press the **left/right Navigation Button** or tap the screen to select **1080P**, **720P/60FPS**, **720P/30FPS**, **WVGA**, **QVGA** resolution.

2. Press the **middle Navigation Button** or tap OK to confirm.

3.2.3 Effect

The Effect menu allows you to change the recording effect.

To set the Effect, please do the following:



1. Use the **left/right Navigation Button** or tap the screen to select the desired option:
   - Natural: Select it for color photography.
   - Black and white: Select it for black and white effect.
   - Sepia: Select it for brown color effect.
2. Press the **middle Navigation Button** or tap OK to confirm.

3.2.4 Night Mode

For better results shooting at night, the Night mode menu allows you to turn the Night mode on or off.

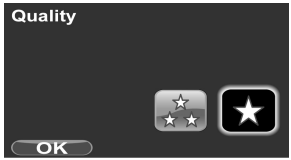
To set the Night mode, please do the following:

1. Use the **left/right Navigation Button** or tap the screen to select **Off** or **On**.
2. Press the **middle Navigation Button** or tap OK to confirm.

3.2.5 Quality

The Quality menu allows you to set video qualities. A file in better quality requires more storage space than a file in the normal quality. To set the Quality, please do the following:

1. Use the **left/right Navigation Button** or tap the screen to select the desired option:
   - High: Select this option for high quality.



   - Normal: Select this option for normal quality.
2. Press the **middle Navigation Button** or tap OK to confirm.

3.3 Using the AF Lock

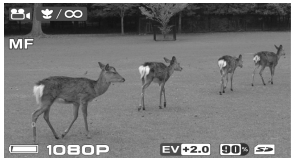
The **Auto Focus (AF) Lock** function is used to lock focus on a desired image.

1. Press the **Navigation button** to enable AF Lock. The AF Lock icon AF appears on the screen.
2. Aim the device on your desired subject.
3. Press the **Record Button** to record videos.

3.4 Using Manual Focus

The **Manual Focus (MF)** function is used to manually set the focus.

1. Press the **right Navigation button** to enable MF function. The MF icon MF appears on the screen.
2. Aim the device on your desired subject.



3. Use the **Zoom Button** to manually adjust the focus.

> **Note**:
> To zoom in or out the image, tap the icon on the screen. Then use the **Zoom Button** to zoom in or out. To toggle back to MF mode, tap the icon.

4. Press the **Record Button** to record videos.

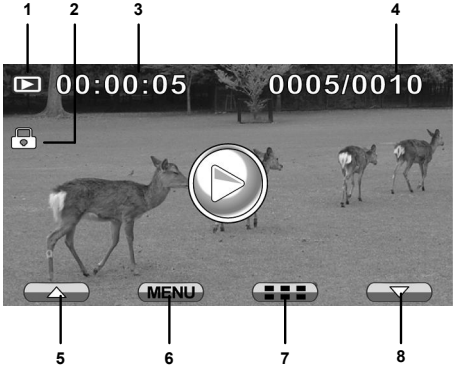
3.5 Playback Videos

3.5.1 Playing Back Videos

To playback videos, please do the following:

1. Make sure you are in the **Video** mode. Move the mode dial to switch to the **Video** mode if not.
2. Press the **Playback Button** to enter the Video playback screen.
3. Press the **left/right Navigation Button** or tap to browse the recorded videos.
4. Press the **middle Navigation Button** or tap to playback the video.
   - To fast forward, press the **right Navigation Button** or tap .
   - To rewind, press the **left Navigation Button** or tap .
   - To stop playback, press the **middle Navigation Button** or tap .
   - To adjust the volume, press the **up/down Navigation Button**.

The Video Playback Screen



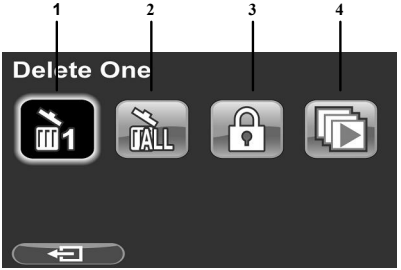
#	Icon	Description
1		Indicates that the camcorder is in Playback mode.
2		Indicates that the file is protected.
3	00:00:05	Indicates the recording time.
4	0005/0010	Indicates the current video/ total videos.
5		Tap to view the previous video.

#	Icon	Description
6		Tap to display the video playback menu.
7		Tap to view the recorded videos as thumbnails.
8		Press to view the next video.

3.6 Video Playback Menu

To select a menu in the Video playback mode, please do the following:

1. Make sure you are in the video playback mode. When in **Video** mode, press the **Playback Button** to switch to the video playback mode.
2. Press the **Menu Button** or tap MENU to open the Video playback mode menu screen.
3. Use the **Navigation Button** to select the desired menu and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
4. Press the **Menu Button** or tap to exit the menu.



The following options are available in the video playback mode menu:

1. Delete One
2. Delete All
3. Protect
4. Autoplay

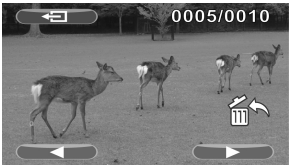
Please read the following section to learn how to operate each menu.

3.6.1 Delete One

The Delete One menu allows you to delete files individually.

To delete a file, please do the following:

1. Use the **left/right Navigation Button** to select **Delete One** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.



2. Use the **left/right Navigation Button** or tap / to select the desired file.
3. Press the **middle Navigation Button** or tap to delete.

3.6.2 Delete All

The Delete All menu allows you to delete all the recorded files.

To delete all files, please do the following:

1. Use the **left/right Navigation Button** to select **Delete All** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.

2. Use the **left/right Navigation Button** or tap the screen to select **X** or .

3. Press the **middle Navigation Button** or tap OK to confirm.

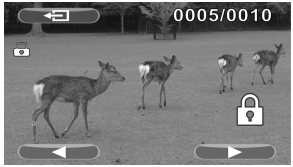
3.6.3 Protect

The Protect menu allows you to protect files from being deleted.

To protect a file, please do the following:

1. Use the **left/right Navigation Button** to select **Protect** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.

2. Use the **left/right Navigation Button** or tap ◄/► to select the desired file.
3. Press the **middle Navigation Button** or tap 🔒 to protect.



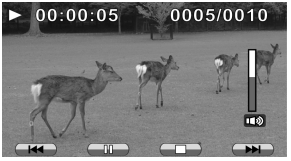
3.6.4 Autoplay

The Autoplay menu allows you to playback the recorded files automatically.

To start Autoplay, please do the following:

1. Use the **left/right Navigation Button** to select **Autoplay** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.

2. It begins the video playback. If you want to stop the Autoplay, press the **middle Navigation Button** or tap .



3.7 Shooting Photos

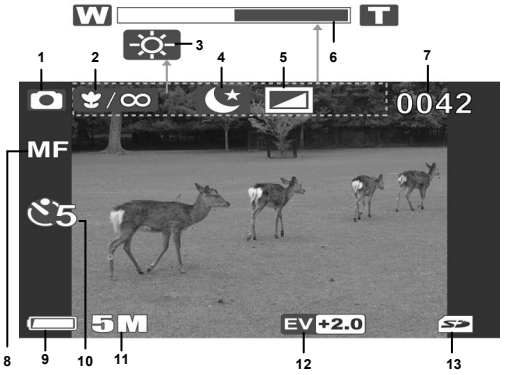
To shoot a photo, do the following:

1. Flip open the LCD to turn on the camcorder.
2. Move the mode dial to switch to **Camera** mode.
3. Press the **Shutter Button** to capture a photo.

To adjust the camera, you may:

- Use the **Zoom Button** to zoom in and out.
- Press the **LED Light Button** to activate or disable the LED light.
- Press the **left Navigation Button** to quickly change the White Balance.

The Camera Screen

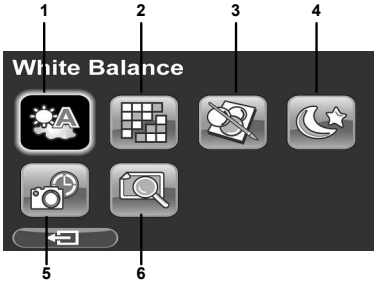


#	Icon	Description
1		Indicates that the camcorder is in Camera mode.
2		Tap to zoom in or out the image (only available in MF mode).
3		Indicates the current White Balance mode.
4		Indicates that the Night mode is on.
5		Indicates the current Effect mode being used.
6		Indicates the amount of zoom being used.
7		Indicates the remaining number of photos.
8	 	Indicates that the Manual Focus (MF) is on. Indicates that the Macro is on. Indicates that the Auto Focus (AF) is on.
9		Indicates the amount of battery power left.
10		Indicates the selftimer is on.
11		Indicates the current resolution.
12		Indicates the current exposure value.
13		Indicates the memory card is inserted / no memory card inserted, files are stored in internal memory.

3.8 Camera Mode Menu

To select a menu in the Camera mode, please do the following:

1. Make sure you are in the **Camera** mode. Move the mode dial to switch to the **Camera** mode if not.
2. Press the **Menu Button** to open the Camera mode menu screen.
3. Use the **Navigation Button** to select the desired menu and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
4. Press the **Menu Button** or tap to exit the menu.



The following options are available in the camera mode menu:

1. White Balance
2. Resolution
3. Effect
4. Night Mode
5. Selftimer
6. Quality

> **Note**:
> The Quality menu is only appeared on the menu screen if you have inserted a memory card into the device.

Please read the following section to learn how to operate each menu.

3.8.1 White Balance

The White Balance menu allows you to adjust the white balance when capturing images under specific lighting conditions.

To set the White Balance, please do the following:

1. Use the **left/right Navigation Button** or tap the screen to select the desired option:
   - Auto: Select this option to let the camcorder set the white balance automatically.
   - Sunny: Select this option for daylight filming.
   - Cloudy: Select this option for filming in cloudy days.
   - Fluorescent: Select this option for fluorescent lighting.
   - Tungsten: Select this option for normal indoor lighting conditions.
2. Press the **middle Navigation Button** or tap OK to confirm.

3.8.2 Resolution

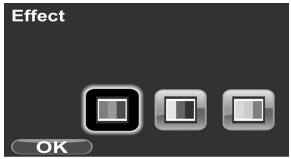
The Resolution menu allows you to set the resolution before you capture an image or a video. The higher the resolution, the more memory space is required. To select the resolution, please do the following:

1. Use the **left/right Navigation Button** or tap the screen to select the desired option:
   - 3M: Select this option for 2048 x 1536 resolution.
   - 5M: Select this option for 2592 x 1944 resolution.
   - 16M: Select this option for maximum resolution.
2. Press the **middle Navigation Button** or tap OK to confirm.

3.8.3 Effect

The Effect menu allows you to change the camera effect.

To set the Effect, please do the following:



1. Use the **left/right Navigation Button** or tap the screen to select the desired option:
   - Color: Select this option for color photography.
   - Black and white: Select this option for black and white effect.

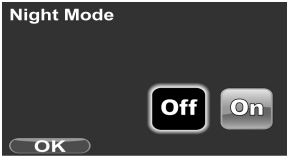
- Sepia: Select this option for brown color effect.

2. Press the **middle Navigation Button** or tap OK to confirm.

3.8.4 Night Mode

For better results shooting at night, the Night mode menu allows you to turn the Night mode on or off.

To set the Night mode, please do the following:

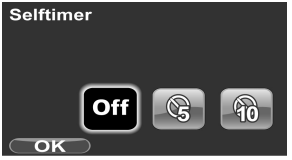


1. Use the **left/right Navigation Button** or tap the screen to select **Off** or **On**.
2. Press the **middle Navigation Button** or tap OK to confirm.

3.8.5 Selftimer

The Selftimer menu allows you to set the selftimer when shooting a photo. The Selftimer lets you to take photos after a pre-defined delay.

To set the Selftimer, please do the following:



1. Use the **left/right Navigation Button** or tap the screen to select:
   - Off: Select this option to disable selftimer.
   - 5 sec: Select this option for 5-second delay.

- 10 sec: Select this option for 10-second delay.

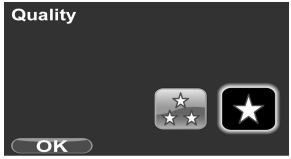
2. Press the **middle Navigation Button** or tap OK to confirm.

3.8.6 Quality

The Quality menu allows you to set photo qualities. A file in better quality requires more storage space than a file in the normal quality.

To set the Quality, please do the following:

1. Use the **left/right Navigation Button** or tap the screen to select:
   - High: Select this option for high quality.



   - Normal: Select this option for normal quality.
2. Press the **middle Navigation Button** or tap OK to confirm.

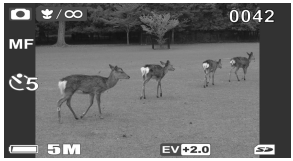
3.9 Using the AF Lock

The **Auto Focus (AF) Lock** function is used to lock focus on a desired image.

1. Press the **Navigation button** to enable AF Lock. The AF Lock icon AF appears on the screen.
2. Aim the device on your desired subject.
3. Press the **Shutter Button** to capture an image.

3.10 Using Manual Focus

The **Manual Focus (MF)** function is used to manually set the focus.



1. Press the **right Navigation button** to enable MF function. The MF icon MF appears on the screen.
2. Aim the device on your desired subject.
3. Use the **Zoom Button** to manually adjust the focus.

> **Note**:
> To zoom in or out the image, tap the / icon on the screen. Then use the **Zoom Button** to zoom in or out. To toggle back to MF mode, tap the W / T icon.

4. Press the **Shutter Button** to capture an image.

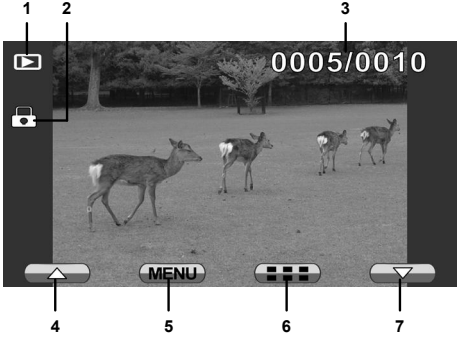
3.11 Playback Photos

3.11.1 Playing Back Photos

To playback photos, please do the following:

1. Make sure you are in the **Camera** mode. Move the mode dial to switch to the **Camera** mode if not.
2. Press the **Playback Button** to enter the Photo playback screen.
3. Press the **left/right Navigation Button** or tap / to browse the recorded photos.

The Photo Playback Screen

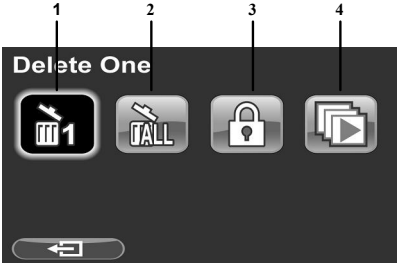


#	Icon	Description
1		Indicates that the camcorder is in Playback mode.
2		Indicates that the file is protected.
3	0005/0010	Indicates the current photo/total photos.
4		Tap to view the previous photo.
5		Tap to display the photo playback menu.
6		Tap to view the recorded photos as thumbnails.
7		Press to view the next photo.

3.12 Photo Playback Menu

To select a menu in the Photo playback mode, please do the following:

1. Make sure you are in the Photo playback mode. When in Camera mode, press the **Playback Button** to switch to the Photo playback mode.
2. Press the **Menu Button** or tap MENU to open the Photo playback mode menu screen.
3. Use the **Navigation Button** to select the desired menu and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu. Please see below for the available options.
4. Press the **Menu Button** or tap to exit the menu.



The following options are available in the photo playback mode menu:

1. Delete One
2. Delete All
3. Protect
4. Autoplay

Read the following section to learn how to operate each menu.

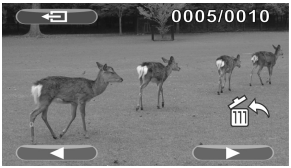
3.12.1 Delete One

The Delete One menu allows you to delete files individually.

To delete a file, please do the following:

1. Use the **left/right Navigation Button** to select **Delete One** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.

2. Use the **left/right Navigation Button** or tap / to select the desired file.
3. Press the **middle Navigation Button** or tap to delete.



3.12.2 Delete All

The Delete All menu allows you to delete all the recorded files.

To delete all files, please do the following:

1. Use the **left/right Navigation Button** to select **Delete All** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
2. Use the **left/right Navigation Button** or tap the screen to select **X** or .
3. Press the **middle Navigation Button** or tap OK to confirm.

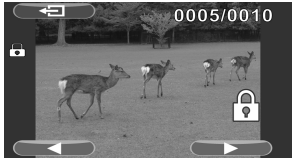
3.12.3 Protect

The Protect menu allows you to protect files from being deleted.

To protect a file, please do the following:

1. Use the **left/right Navigation Button** to select **Protect** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.

2. Use the **left/right Navigation Button** or tap / to select the desired file.
3. Press the **middle Navigation Button** or tap to protect.



3.12.4 Autoplay

The Autoplay menu allows you to playback the recorded files automatically.

To start Autoplay, please do the following:

1. Use the **left/right Navigation Button** to select **Autoplay** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.

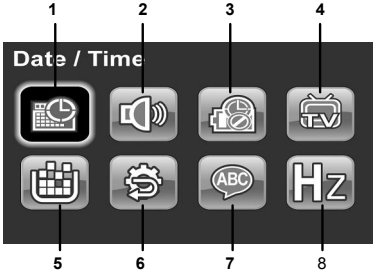
2. It begins the photo playback. If you want to stop the Autoplay, press the **middle Navigation Button**.

3.13 System Menu

The system menu is used to configure miscellaneous camcorder function.

1. Move the mode dial to **SET**.
2. Use the **Navigation Button** to select the desired menu and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu. Please see below for the available options.

The following options are available in the Set mode:



1. Date / Time
2. Beep
3. Auto Power Off
4. TV standard
5. Format
6. Default
7. Language
8. Frequency

Please read the following section to learn how to operate each menu.

3.13.1 Date / Time

See section 2.9.1 “Setting the Date and Time” on page 17.

3.13.2 Beep

See section 2.9.3 “Setting the Beep” on page 18.

3.13.3 Auto Power Off

The Auto Power Off menu allows you to set an idle time after which the camcorder automatically sets to sleep mode to save power.

To adjust the Auto Power Off, please do the following:

1. Use the **left/right Navigation Button** to highlight **Auto Power Off** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
2. Use the **left/right Navigation Button** or tap the screen to select:

   - Off: Disable the Auto Power Off function.
   - 1 min.: Auto Power Off after 1 minute.
   - 5 min.: Auto Power Off after 5 minutes.
3. Press the **middle Navigation Button** or tap OK to confirm.

3.13.4 TV Standard

The TV Standard menu allows you to select the TV standard of the recorded videos.

To adjust the TV Standard, please do the following:

1. Use the **left/right Navigation Button** to highlight **TV standard** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
2. Use the **left/right Navigation Button** or tap the screen to select **NTSC** or **PAL**.
3. Press the **middle Navigation Button** or tap OK to confirm.

3.13.5 Format

The Format menu allows you to format your memory card or the internal memory when no memory card is inserted.

To format your memory card or internal memory, please do the following:

1. Use the **left/right Navigation Button** to highlight **Format** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
2. Use the **left/right Navigation Button** or tap the screen to select **X** or √.

3. Press the **middle Navigation Button** or tap OK to confirm.

Warning: Formatting will delete everything on the media.

3.13.6 Default

The Default menu allows you to reset the camcorder to factory defaults.

To reset, please do the following:

1. Use the **left/right Navigation Button** to highlight **Default** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
2. Use the **left/right Navigation Button** or tap the screen to select **X** or √.
3. Press the **middle Navigation Button** or tap OK to confirm.

3.13.7 Language

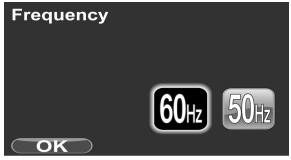
See section 2.9.2 “Setting the Language” on page 17.

3.13.8 Frequency

The Frequency menu allows you to set the refresh rate of the camcorder. Increasing the refresh rate decreases flickering, thereby reducing eyestrain.

To set the refresh rate, please do the following:

1. Use the **left/right Navigation Button** to highlight **Frequency** and press the **middle Navigation Button** to open the menu. You can also tap the screen to open the selected menu.
2. Use the **left/right Navigation Button** or tap the screen to select **60Hz** or **50Hz**.
3. Press the **middle Navigation Button** or tap OK to confirm.



Appendix

Specifications

General	
Imaging sensor	1/3.2"CMOS 5.0 Megapixel Sensor
Active pixels	5.0 Megapixel
Storage media	Internal: Built-in 128MB Flash Memory SD Card: (Up to SDHC 32GB Class6)
Color effects	Natural/B&W/Sepia
Lens	5X Optical zoom lens
Focus range	Wide: 45cm ~ infinity Tele: 20cm ~ infinity Macro: 5cm ~ 100 cm
Still image	Formats: JPEG (EXIF 2.2), DCF, Resolution: 3M, 5M, 16M (Firmware Interpolation)
Movie clips	H.264 (AVI) Resolution: 1080P/30fps, 720P/60fps, 720P/30fps, WVGA, QVGA

General	
Zoom	Movie: 5X Optical Zoom, 4X Digital Zoom (except 1080p and QVGA) Camera: 5X Optical Zoom, 4X Digital Zoom
TFT monitor	3.0" TFT (960 x 240 pixels) (16:9)
LED light	Effective range: < 1M Mode: On/Off
White balance	Auto/Sunny/Cloudy/Tungsten/ Fluorescent
EV compensation	-2.0 EV~+2.0 EV
Self-timer	Off, 5, 10 seconds
PC interface	USB 2.0 (high speed)
AV out format	NTSC/PAL/HDMI
Shutter	Electronic shutter Video: 1/15 - 1/2000 sec. Still: 2 sec. ~ 1/4000 sec.
Auto power off	Off, 1 min., 5 min.
Power supply	Li-ion Battery NP120
Dimensions	119.6 (W) x 61.5 (H) x 46.6 (D) mm
Weight	Approx. 222 ± 5g (without battery)

Troubleshooting

Problem	Possible Cause	Solution
Cannot turn on the camcorder.	The battery is not inserted correctly. The battery have no power.	ⓘInsert the battery correctly. ⓘCharge the battery.
The camcorder suddenly turns off.	The auto power off function is enabled. The camcorder is running out of battery power.	ⓘTurn the power on again. ⓘReplace the battery.
The captured image is not stored in memory.	Before the image is saved the power has been cut off.	ⓘWhen the battery indicator turns red, replace the battery immediately.
The camcorder turns off when capturing image using the selftimer.	The camera is running out of battery power.	ⓘReplace the battery.
The image is out of focus.	The subject is beyond focus range.	ⓘPlease take a picture within the available focus range.

Problem	Possible Cause	Solution
A black screen appears on the screen.	The EV setting may be set too high.	ⓘ Adjust the EV setting on the camcorder.
Memory card cannot be used.	The memory card is protected. The memory card contains non-DCF images taken by other camcorders.	ⓘ Unlock the memory card. ⓘ Format the memory card. Before formatting the card, ensure you back up the files.
All buttons are inactive.	Short circuit occurred when connecting the camera with other devices.	ⓘ Remove the battery from the camera and insert it again.

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